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# ·ALVMNI· REPORT·

·PVBLISHED·BY·THE·ALVMNI·ASSOCIATION·OF·
THE·PHILADELPHIA·COLLEGE·OF·PHARMACY·

PUBLICATION OFFICE, 145 N. TENTH ST., PHILADELPHIA

VOL. XXXVI. APRIL, 1900. No. 4

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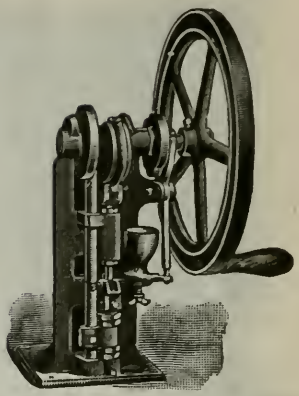

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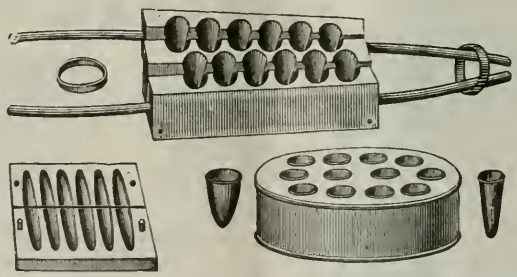

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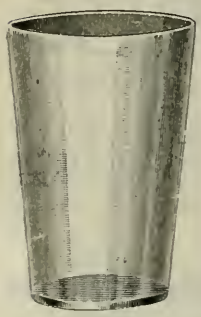

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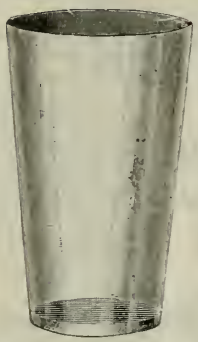

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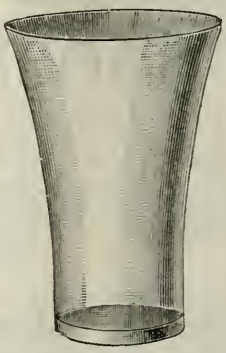

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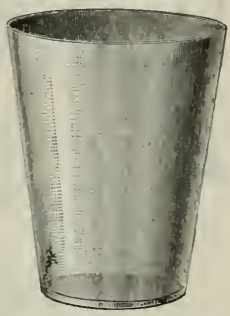

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## SODA.

| No. | | Per doz. |
|---|---|---|
| 147A. | Thin. Contents, 14½ ozs. | $1 40 |
| 147B. | Thin sides, heavy bottom. Contents, 15 ozs. | 2 00 |
| 375. | Heavy. Contents, 11½ ozs. | 1 40 |
| 387. | Heavy. Contents, 11 ozs. | 1 40 |
| 400. | Heavy. Contents, 12 ozs., like No. 375, but larger | 1 40 |
| 410. | Thin. Contents, 12 ozs., like No. 147, but shorter | 1 20 |
| 425. | Thin. Flared. Contents, 10 ozs., style of No. 430 | 1 20 |
| 430. | Thin. Flared. Contents, 12½ ozs. | 1 35 |
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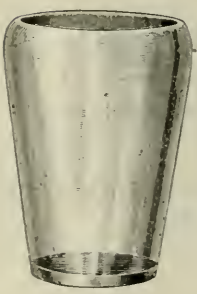

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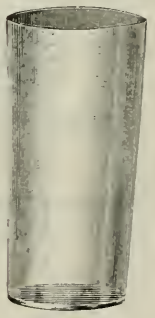

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## MINERAL.

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|---|---|---|
| 1. | Small Mineral. Contents, 8 ozs. | $0 80 |
| 2. | Small Mineral. Contents, 6¾ ozs. | 80 |
| 3. | Thin. Flared. Contents, 8 ozs. | 1 00 |
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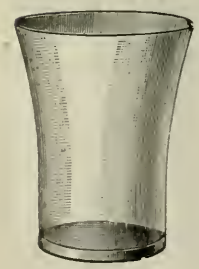

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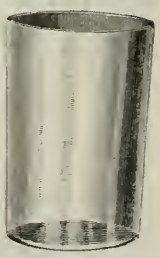

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ALUMNI REPORT

PUBLISHED MONTHLY BY THE ALUMNI ASSOCIATION OF THE PHILADELPHIA COLLEGE OF PHARMACY.

VOL. XXXVI. ... APRIL, 1900 ... No. 4

# Editorials.

## CHARLES BULLOCK.

It is with sincere regret that we find it necessary to chronicle in this issue the demise of Charles Bullock, President of the Philadelphia College of Pharmacy and senior member of the well-known firm of Bullock & Crenshaw, who died at his residence, 1017 Clinton Street, on Wednesday, March 21, 1900, after an illness of five weeks. Pneumonia was the cause of death.

He was born at Wilmington, Del., February 25, 1826. His father, John Bullock, a prominent member of the Society of Friends, was principal of a boarding school for boys at Wilmington, which acquired a wide reputation, not only in the United States, but in the West Indies and South America. At an early age young Bullock showed a liking for scientific work, and, having the advantage of the use of his father's scientific instruments, spent much of his time in the construction of physical apparatus, especially that designed to illustrate magnetic and electrical phenomena, which, at that time, were attracting especial attention. His mother was the only sister of the late John Griscom, LL.D., of New York, who was among the first to introduce and illustrate chemistry in the public schools of New York. From his uncle, Charles Bullock had his attention attracted to that branch of science, which determined his choice of business for life.

His early education was had at the Haverford College, which he entered at the age of 15 years and where he remained for two years.

He was engaged by Smith & Hodgson, at Sixth and Arch Streets, in 1844, where he learned the business of a druggist and apothecary, remaining until 1849, when,

with another employee, the late Edmund A. Crenshaw, he succeeded to the business of Smith & Hodgson. During the time he was employed at the store Mr. Bullock attended the Philadelphia College of Pharmacy, from which he was graduated in 1847.

The development of the mining and manufacturing industries of the country soon caused an increase in the business of the new firm, and, in 1851, Mr. Bullock visited Europe, where he acquired additional information regarding the chemical necessities of native industries.

In 1868 Bullock & Crenshaw removed from Sixth and Arch Streets to the present location, at 528 Arch Street.

Mr. Bullock became a member of the Philadelphia College of Pharmacy in 1849, a few years later was elected a trustee, and, after serving several years as Vice-President of the College, was elected President upon the death of Dillwyn Parrish, in 1886. He had continued in that position since, and the title Master of Pharmacy had been conferred upon him by the College.

Mr. Bullock became a member of the American Pharmaceutical Association in 1857, and served as Recording Secretary for two years, and as President for one. He was a member of the American Philosophical Society and the Academy of Natural Sciences, and also Vice-President of the Franklin Institute. For many years he was a vestryman of the old Christ Episcopal Church, on Second Street, above Market, Christ Church, Germantown, and of St. Peter's Church, Germantown, since its foundation, twenty-six years ago.

He is survived by a son, William A. Bullock, a graduate of the Philadelphia College of Pharmacy, Class of '86.

A special meeting of the members of the Philadelphia College of Pharmacy and the Board of Trustees was held at the College on Friday, March 23, 1900, to take action upon the demise of President Bullock. William J. Jenks, First Vice-President, was in the chair.

Remarks were made by Messrs. Jenks, Shinn, Sadtler, Beringer, Ellis, England, Ross, Remington and Krewson expressive of the high personal character of Charles Bullock, his valuable work in the field of pharmaceutical science, and his patient, unremitting devotion for years to the interests of his *Alma Mater*.

Professor Remington then presented the following resolutions which, on motion, were agreed to, ordered to be placed upon the minutes, and a copy sent to the family :

"*Resolved*, That this College will always hold in grateful remembrance the persistent labors of our deceased President, and endeavor to emulate his example ; the unobtrusive, consistent, conscientious effort to fulfil all of his duties will ever be an incentive to his colleagues, who deplore most deeply his removal from our midst.

"*Resolved*, That we tender to his family our sincere sympathy in their sorrow, and that a copy of these resolutions be forwarded to them, and also be placed permanently upon the records of the Philadelphia College of Pharmacy, as a memorial of the high esteem and affectionate regard in which he was universally held by all of its members."

The Committee on Memoirs, with the addition of George M. Beringer, was directed to prepare a memoir for publication in the *American Journal of Pharmacy*.

On motion, it was agreed that the members attend the funeral of the deceased, to be held on Saturday, March 24. This was done, a large number of the friends of the deceased being present at the services. Interment was had in Wilmington, Del.

## THE GRADUATE REQUIREMENT FOR STATE BOARD EXAMINATIONS.

It is gratifying to note that there is a distinct trend in the pharmaceutical world towards inaugurating movements to have amended the pharmacy laws of various States so as to

require that all applicants for examination for the higher certificate, at least, shall be, as a prerequisite, graduates of accredited schools of pharmacy. This is as it should be. Not that it would be of benefit to schools of pharmacy, but on the broader ground that it would be a distinct public gain by ensuring better pharmaceutical service to the public.

Under the title of the "Growth of the Graduate Requirement Idea," the *Journal of Pharmacology* (December, 1899, 208) has an editorial, presumably written by Prof. H. H. Rusby, of the College of Pharmacy of the city of New York, as follows:

One of the commonest errors of criticism is the assumption that those who favor a course which is beneficial to themselves necessarily do so because it is beneficial to them. If a minister accepts a call from a poorer to a richer parish, he is at once looked upon by this class of critics as determining his duty according to the interest of his pocket. The idea that a richer parish means a larger (and always a more difficult) field, and the exercise of larger abilities, with consequent larger results, does not occur to them. Thus, because the requirement of graduation as a prerequisite to a pharmacy examination means increased attendance, many superficial or hasty critics, as well as those who are disingenuous, at once assume that colleges must be influenced by this consideration in urging it. Does it never occur to these critics that the schools of pharmacy owe a solemn duty to their graduates, even after the diploma has been awarded? It is, of course, utterly impracticable for them to follow up each graduate and undertake to perform an individual duty for him in the way of guaranteeing his future. But to graduates collectively, those of other schools as well as their own, every pharmacy school is bound. These men have devoted years of time and hundreds of dollars in fitting themselves for their work. It is true that this work brings its own reward, not only in increased satisfaction and self-respect, without which a man is poor indeed, but in increasing the chances of success. This is not all that is desired. A distinct injustice is involved in the permission by the State to those who have stolen into the profession without a proper expenditure in preparation, to compete with those who have taken such a course. The injustice to the public is, it is true, even much greater; but we are confining this argument strictly to the rights of graduates and the duty of the *alma mater* toward them. There is really no room for argument against the claim which rests upon the colleges to support the movement for the graduate requirement. If this is true, it is no less true that it is the duty of every graduate to back up the schools in their attempt. If Philadelphia graduates are in or near New York, they should put away all narrowness and join heartily with the local organization in their efforts to secure this legislation in our State. Our graduates in Pennsylvania should be no less broad and energetic.

It is most pleasing to note that this aspect of the case is becoming more and more appreciated by graduates throughout the State, as well as by our college members. We are continually in receipt of assurances from these men, frequently volunteered, that they are awake to the situation and eager to work for the cause. At the recent college meeting, when a resolution was offered looking toward improving the status of pharmacists in the National Guard, the offering of an amendment providing that hereafter none but graduates should be accepted was received with great enthusiasm. It is to be hoped that both parts of the resolution will prove acceptable to the powers that be. Meantime, we may take encouragement from this additional evidence of the growth in favor of the graduation requirement.

Following this admirable editorial, there has appeared another in the pages of the *Pharmaceutical Era* (March 29, 1900, 333), entitled "College Graduation as a Prerequisite to Board Examination," which states, in part, that:

There is a considerable and growing number of supporters for the proposition that as a prerequisite to examination by a board of pharmacy the candidate should possess a diploma from a reputable college of pharmacy. Inasmuch as this proposition has already assumed the form of a definite attempt to secure legislation of this character in at least one of the States, a general discussion appears desirable.

It is urged that this requirement would materially elevate the status of pharmacy, tending thereby to both financial and professional benefit. Is this contention warranted?

One effect of such a regulation would be that all candidates for examination by boards of pharmacy would possess some amount, great or small, of a systematic training. How much and how good this would be would depend entirely upon the complexion of the list of colleges whose diplomas would be granted this recognition. If the boards were lax in this respect, accepting the diplomas of the lower grade of colleges, little real reform would be effected. But if the list were carefully prepared, restricted to those institutions only whose courses of study and graduation requirements were of specially high standard, undoubtedly those admitted to practice pharmacy would possess better qualifications than is now the case. The diploma requirement, if properly enforced, would keep both the boards of pharmacy and the colleges of pharmacy up to the mark.

Another effect would be the restriction of the practice of pharmacy to those who were best qualified to

do it credit, and to largely decrease the number of those entering the profession. Decrease in competition would mean increase in profits.

The question of paramount importance to be considered, however, is what degree, if any, of injury would be worked by legislation of this character. Would such requirement debar from the practice of pharmacy worthy young men who, though possessing a good general knowledge of the drug business, have been unable by force of circumstances to secure the college education? There is some degree of plausibility and justice in this objection, but is it not offset by probable advantages? Such a law could not be made retroactive, could in no way affect those already following the profession, and with regard to those studying for it, or contemplating study, the date at which the law should go into effect could be placed so far distant as to exempt all these from its operation, and at the same time be a warning to those who would hereafter propose to adopt the drug business that they must qualify themselves in the stipulated manner.

The tendency of the times is to require that all in the learned and skilled professions shall possess the requisite amount and character of learning and skill to safely and properly discharge the duties and responsibilities of these callings. The physician in order to enter practice, the lawyer to be admitted to the bar, must each show evidence by diploma or certificate that he has followed a certain outlined course of preparation and has become qualified.

There is no danger that the proposed restriction will become general at once, or even very soon. Necessary to establish it is the securing of legislation in the several States, by new laws, or the amendment of existing statutes. Inasmuch, also, as there is such great diversity of requirements among both boards and colleges, the minimum educational requirements might possibly be determined by a system of State Regents' marks, rather than the college diploma. There is some question also of the constitutionality of such a measure, although on the ground of protection of the public health and life it may be urged that there is nothing unconstitutional in a measure which shall provide for the better qualification of those having this health and life in their charge.

There likewise obtrudes for discussion the question, or rather phase of the main question, whether the college graduate is the superior or the inferior of one who attains his pharmaceutical knowledge in ways and paths other than those provided by the college. Some druggists are loud in their protestations that they would not employ a college graduate under any conditions, whereas there are as many others who would always give preference to the diplomaed man.

It is axiomatic that one cannot have too much preparation, too much education, for any calling, not excepting the drug business. The education which commences at the beginning, proceeds by successive steps, is logical, systematic, thorough and complete, is unquestionably superior to that hit-or-miss variety gained by unsystematic, desultory, undirected reading of textbooks, with no definite plan, and the picking up here and there of trifles of information during one's apprenticeship. Other things being equal, there is no denying the superiority of the former variety over the latter. It must be clearly understood, in addition, that the proposition is not to do away with board examination as a test of the candidate's efficiency, but to impose an additional requirement before he is eligible to examination. The curse of the drug business is the opportunity afforded for entrance of young men sadly deficient in preliminary education, poorly equipped with technical, professional education, but who, through lack of the proper restrictions in this respect, succeed by hook or crook in passing the board examination and receiving registration as pharmacists. The board is not to have its present powers curtailed, but increased. It will still examine, but it will have better material provided to work upon.

The whole subject presents so many phases, so many apparently irreconcilable differences, that it is an instance where we should make haste slowly. There should be an expression of the opinion of every educator and practicing pharmacist, that out of the mass of opinions and suggestions there may be derived a line of operation along which progress of the right kind may be made.

Little can be added to these expressions of opinion save this: That pharmaceutical examinations, conducted by the most skilled examiners, form a most imperfect test of theoretical knowledge and practical ability, unless they have been preceded by a systematic and comprehensive development, under trained teachers, in the theories and practical workings of pharmaceutical science extending through a sufficient number of years to permit proper mental assimilation. Examinations alone are a woefully poor substitute for systematic education; they have a most limited value. The main thing in education is systematic development along right lines by trained teachers, and the examination end of it is only a necessary evil which exists because no better test of the results of teaching has as yet been devised. Hence, the State which requires its examiners of pharmacists to grant applicants certificates to practice upon simply passing examinations (in many cases upon theoretical branches only) without demanding that the applicants shall have had as a prerequisite a training as a pharmacist in an

accredited school of pharmacy, is derelict in its duty to the sick and the dying, and is deserving of the warmest censure.

What is now wanted is a proper education of the public upon the dangers of bad pharmaceutical service and the kind of protection the State should give against incompetency and worse in the compounding and dispensing of drugs and medicines, and then, a demand of legislators by the public, and of which pharmacists form a part, for the right kind of legislation. It should be asked for by the public, not as a favor, but demanded as a right.

# Pharmaceutical Meeting.

The sixth stated Pharmaceutical Meeting of the Philadelphia College of Pharmacy, for the year 1899–1900, was held on Tuesday afternoon, March 20, 1900. James T. Shinn presided as chairman.

On motion, the reading of the minutes of the previous meeting was dispensed with.

The first speaker was F. B. Kilmer, of New Brunswick, N. J., who gave a most interesting talk upon the subject "In Lands where Drugs Grow," illustrating the same with a series of lantern views. The address is to be found in full in the April issue of the *American Journal of Pharmacy*.

J. W. England asked several questions; the first one was as to the possibilities of there being developed in this country a new industry—that of cultivating medicinal plants; the second was as to the therapeutic values of green drugs in comparison with those that had been dried.

In reply, Mr. Kilmer said that the cultivation of medicinal plants in the United States at present could hardly be looked upon as a commercial success, that is, from the American viewpoint. With German or English eyes, however, the situation might be regarded differently, as a dollar of profit with them stood for so much more than it did with us. He thought that many foreign-grown drugs could be grown in this country, and that the matter was one that should be made the subject for serious study, especially by colleges of pharmacy and agricultural experiment stations. In Europe, hand-labor in such work was the rule; in this country the inventive mechanical genius of the Yankee had devised machinery, or might devise new machinery to meet special needs that would overcome the handicap of the cheaper labor of Europe.

Replying to the second query, Mr. Kilmer said that those who handled green drugs became immune to any toxic effects they might have ordinarily, or else the active principles were not fully developed.

Prof. F. G. Ryan read on behalf of Professor Wilbur L. Scoville, of the Massachusetts College of Pharmacy, a practical paper on "Effervescing Citrate of Magnesium" (see *American Journal of Pharmacy*, April, 1900, 175). In speaking of the subject matter of the paper, Professor Ryan said that no manufacturer attempted to follow the official method because of its impracticability. The plan generally followed by manufacturers was to heat the materials used in a jacketed kettle until they became pasty, and then to granulate by stirring with a paddle.

A paper of much practical interest was read by Dr. L. Napoleon Boston, Bacteriologist to the Philadelphia Hospital, who gave the results of a number of years of microscopic study of urine, sputum and blood, and the best methods for preserving their elements and of examining them microscopically (see *American Journal of Pharmacy*, April, 1900, 170).

Professor Kraemer commented upon the variability in results had with aniline stains. He said that it had been shown that the same substance of different sizes and densities

took up different stains. The two factors involved in securing uniform results were: the position of the object in the reagent, and the varying chemical composition of many aniline stains.

Frederick T. Gordon, Apothecary at the League Island Navy Yard, exhibited an apparatus for readily estimating urea, the estimation being founded upon the amount of nitrogen evolved from a mixture of urine and chlorinated lime.

Prof. Frank X. Moerk stated that the apparatus was similar to that devised by Dr. Squibb in 1884, the difference in the process being that Dr. Squibb used solution of chlorinated soda in place of the chlorinated lime.

Professor Moerk exhibited specimens obtained, through Mr. Geyer, from Messrs. Baugh & Sons, Philadelphia, which represented products obtained from bones and skins in the making of fertilizers. Among the samples were: neat's foot, light bone and marrow oils, glue, lard stearin, tallow and bone grease.

Professor Ryan exhibited the valuable collection of opium loaned for exhibition at the previous meeting by Gilpin, Langdon & Co., of Baltimore, and said that the collection had been presented to the College. He therefore moved a vote of thanks to the firm for their generous gift, which was unanimously agreed to.

On motion, the meeting adjourned.

# Papers.

## THE PRESENT STATUS OF PHYSIOLOGICAL STANDARDIZATION.

By Joseph W. England.

In the March (1900) issue of the *Bulletin of Pharmacy* there was contained the following editorial upon the subject of "The Accuracy of Physiological Standardization:"

In an article published in the ALUMNI REPORT for December, and discussed by us at some length last month, Joseph W. England discredits the accuracy of physiological standardization. He concedes the *qualitative* value of such standardization, but he denies its *quantitative* value. Briefly expressed, his position is that physiological valuation can *never* (italics mine, J. W. England) be quantitative in character because of personal idiosyncrasy—because the degree of cellular reaction to a remedial substance is different in different individuals, and even different in the same individual at different times.

The answer to this objection is very brief: First, it is found upon experiment that with each drug to be physiologically assayed there are certain types of the lower animals with which this variability of individual idiosyncrasy is not nearly so great as in man; secondly, to render that variability still less, and to make the conditions of assay as uniform as possible, animals are used of the same type, same species, nearly the same weight, and they are fed on the same food and kept under exactly the same conditions; and, thirdly, still further to remove the element of variability and to narrow so far as possible the limits of error, *a number of animals* are always used in making a given assay and the average of results is computed, thus reducing to a minimum the possibility of error through the element of individual idiosyncrasy, or through a mistake of the pharmacologist.

So much for theoretical considerations. But these avail little if not supported by the weight of practical experience. Let it be said, then, that physiologically standardized preparations of digitalis, strophanthus, ergot, cannabis indica, *et al.*, compared with those which are *un*standardized, have proved to be instruments of definite potency and scientific precision. Before the day of physiological standardization, these drugs were all notoriously indefinite in strength and unreliable in character; cannabis indica, indeed, while at one time in very general use, had afterward fallen into disrepute because of its great uncertainty of action. Physiological standardization has removed the elements of danger, uncertainty and indefiniteness in these drugs, and it has provided the physician with preparations which yield him the results he desires, and sometimes desires most urgently and promptly. The clinical proof extending now over a series of years clinches the argument.

It was not claimed by the writer that physiological valuation can *never* become quantitative in character because the degree of cellular reaction to a remedial substance is different in different individuals and even different in the same individuals at different times, as stated above. What he did say was that the one factor that most largely makes practical medicine an inexact science is the personal factor of the patient—the individuality, or individual cellular reaction or specific irritability, so to speak. Practical medicine has to deal not only with the variable and varying composition of cellular tissues, but also with the vital or individual reaction of cellular contents to the presence and influence of remedial substances, which varies in *force* with each individual at a given time, and with the same individual at different times. In other words, the personal factor in disease-treatment is, in a broad sense, an always variable factor of the greatest possible import, and medical practice can never become an exact science because it has to deal with variable and inexact conditions, not only in the individual patient, but also in the composition of remedial agents, *though this latter factor is in some respects more easy of adjustment than the former;* and doubt was then expressed that the lower vertebrates could serve as mechanically accurate means of measuring drug-values, physiologically, although the lowest forms of cells might serve as standards, all of which is very different from saying that medical practice may not be made *more* exact, or that physiological standardization may not *become* quantitative in character in the future.

The conclusions of the *Bulletin of Pharmacy* hinge upon the claims that the degree of individual reaction to drugs in the cellular tissues of certain types of the lower animals is not nearly so great as in man, and that this variability may be minimized by averaging the results obtained from a number of animals of the same type and species and about the same weight, and kept under the same conditions. These claims are based, of course, upon physiological data.

The question now turns upon the accuracy and sufficiency of such data. Has physiological science so advanced in its methods that its workers can quantitatively estimate drug-values, physiologically, or is it not possible that the enthusiasm of physiological scientists has led them to make extreme claims? The writer inclines to the latter view.

Perhaps the most widely known worker in this country in studies upon the physiological actions of drugs upon animals—one who has done more work probably than any other medical man to stimulate the study of physiological actions and the development of rational medical practice—is Dr. Horatio C. Wood, of Philadelphia, the Chairman of the U. S. Pharmacopœial Revision Convention to be held at Washington on May 2, 1900. Early in the present year the writer received the following opinion from him, based upon almost daily laboratory work extending over twenty years, which is here given with his permission:

*Joseph W. England, Philadelphia.*

DEAR SIR:—With great labor and care it might be possible to approximately standardize the preparations of a few drugs like strychnine, which have very violent and definite action upon frogs; but with other remedies, such as ergot and digitalis, for which physiological standardization is especially desired, the process seems to me valueless. The susceptibility not only of different species of animals, but of different individuals of the same species, varies enormously, I should say as much as 30 per cent.; and even the same animals seem frequently to vary very distinctly at different times in regard to dosage. Moreover, the accuracy of experimentation required in order to make any semi-approximate test is so great that it can only be done by the most skilled and careful observers, and is so laborious that days of work would be necessary for every sample looked into. In the hurry and push of commercial enterprise, in the secrecy of the work done, in the difficulties of the labor, in the uncertainties of the most scientific investigation of the dosage of drugs, I find so many obstacles that, personally, I think the method entirely unfit for introduction into the Pharmacopœia, and attach little value to any published statements by manufacturers. Truly yours,

H. C. WOOD.

*January 26, 1900.*

Now, a reading of this opinion will show that Dr. Wood does *not* say that the problem of physiological standardization is impossible of solution or will not be ultimately solved, but he does indicate that, *at present*, it is in an embryonic stage, to say the least, and that extreme claims have been made for it.

No one wishes to depreciate the admirable work that has been done and is being done to-day in physiological research, work which may result at any moment in the discovery of broad, far-reaching principles of quantitatively estimating drug-values physiologically; but is it not wiser to recognize that, according to the most eminent of physiological authority, all existing methods are in an embryonic stage, and have, at present, their limitations, rather than to make claims, which, apparently, cannot be substantiated?

## ANCIENT POMPEII AND ITS PHARMACY.

By Edward S. Power, Ph.G.

Taking a train at Naples, Southern Italy, Pompeii is reached after a ride of about 12 miles, the railroad running along the shore of the beautiful Bay of Naples, through fig orchards, vineyards and cactus growths, which appear not unlike our own "prickly pear," but standing often 10 feet high. These are apparently cultivated for a large red, berry-like fruit, clinging to them as clusters of grapes, the peasantry suspending them in great bunches over their doorways.

Immediately on reaching the insignificant town of modern Pompeii, one is besieged by a small army of uncouth-looking Italians, all anxious to act as guides up to the crater of Mount Vesuvius.

One is early warned, however, against the employment of this dangerous set, some of whom might not hesitate to rob or murder a stranger while making such a long, lonely journey on horseback.

But a few yards from the railway, a steep street leads to the gates of Ancient Pompeii, where, by paying the Italian Government an entrance fee of 70 cents and securing a "union guide" at 40 cents per hour, though the latter is optional, one is allowed to behold the most wonderful spectacle ever seen. In the year 79 A.D., Pompeii, then a prosperous Italian city, was deluged with fire and lava from the volcano of Mount Vesuvius, which, overflowing the country for miles, burying also other cities and towns, reached Pompeii, completely enveloping every housetop, temple and building. The Government has been at work excavating since 1750, and probably two-thirds of that ancient city has been opened up to the wondering vision of the present century, the other third being still buried to a depth of perhaps 20 feet.

At no other place in the world is one enabled to study ancient home-customs and antique architecture as here. For nearly nineteen centuries this entire city was completely covered up and hermetically sealed, preserving till now its arts, treasures, household utensils, even inhabitants and domestic animals. A soldier asleep in the barracks; a sick man with cane, unable to get away; a mother and daughter slumbering together in bed, overwhelmed by the downpour of lava, all bear mute testimony of that awful event. Fourteen loaves of bread charred by the intense heat, and nearly every article of household use, many of them resembling what we have at the present day, are perfectly preserved.

One enters into a business street, with its wine, oil shops and stores, besides bank, where at the entrance in mosaic is a Latin inscription meaning "Welcome is Gain." The guide next ushered us into a room with only wall decorations, saying, "This was a

pharmacy." There were, however, no tangible evidences that here had once been a pharmacy. Except beautiful paintings on the walls where cupids were seen compounding medicines in mortars with pestles and spatulas—casings with druggists' bottles, and some other belongings to our ancient pharmaceutical profession, there was nothing else to indicate the existence of a pharmacy. Yet we have perhaps no more positive proof anywhere that pharmacy was a science at so remote a date. We are apt to think of our art as a modern one, having come to us from times quite recent, but when a complete pharmacy is thus portrayed, bearing many indications of what we see now, one is forced to admit that antiquity may have known much of pharmaceutical manipulation, as it did of art, sculpture and literature.

Speaking of art, one is strongly impressed with the high grade of paintings seen on these recently uncovered walls of Pompeii. The writer visited almost every art gallery of importance in Europe, observing few signs of any art from this year of the city's destruction till the Renaissance period of about 1500 A.D. All art seems to have completely vanished from the world until Pope Sextus, some other ecclesiastics and a few of the crowned heads encouraged its perfection in church decoration and biblical illustration. Artists of to-day call Pompeiian art a "lost art," and are said to be unable now to imitate it. The paintings on the walls of this Pompeiian pharmacy and elsewhere are most perfectly made up of bright colors, with figures and designs full of vivid, life-like expression. Other streets of the restored city are purely residential, occupied at that time by the wealthy in palaces, or given up to humble life. The authorities were then digging from out the lava a complete temple, the pillars of which, though broken by the earth's vibrations, looked as beautifully white and recent as though freshly chiselled.

In one place was seen a kitchen, with its cooking implements containing food in course of preparation, when the volcanic outburst occurred. At Naples the poor are still seen preparing meals with utensils and methods identical to those found in ancient Pompeii.

The city's supply of water was then delivered to the poor at fountains, just as it is done everywhere now, while the palaces were supplied through leaden pipes extending underground, and joined together exactly as do our best plumbers to-day. On the fountains, where people rested their hands while quenching thirst, the stones were much worn, and paved streets were cut into deep gullies by wagons. Very much of interest might be said of ancient Pompeii, but only a visit to that place could give even an idea of its many wonders.

## GREEK AND ROMAN PHARMACY.

By C. J. S. Thomson.

Rome at an early period gave birth to several philosophers and practitioners in the art of healing. Cornelius Celsus, who is thought to have been a Roman, was a much esteemed writer of the time, and his works on medicine show the advanced state of surgery and medicine during the Roman Empire.

His work on medicine gives a considerable insight into the pharmacy of the Romans in his time. With reference to their weight, he says, "I would have it understood that in an ounce is contained the weight of seven denarii; next, that I divide each denarius into six parts, that is, sextantes, so that I have the same quantity in the sextans of a denarius that the Greeks have in their obolus."

Of the methods of administration employed in early Roman pharmacy the malagma was commonly used. It was a kind of soft mass composed of herbs and gums beaten up to the consistency of a thick paste, and applied to the skin. Numerous formulæ for malagmas are given, in which pellitory, myrrh, resin, cardamoms, ammoniacum, galbanum, etc., are included. The malagmas corresponded with our ointments. Then they used plasters, of which the basilicon of galbanum, pitch, resin and oil in an improved form has survived two thousand years. Troches, for healing wounds, were composed of dry medicines held in suspension by some liquid, such as wine or oil. Pessaries (vaginal) were first originated by the Greeks, who called them pessi. The ingredients were placed in a piece of wool, and thus used. Powders and snuff were also common methods of administration.

Antidotes for bruises, bites and poisons were regarded as extremely important. One was called Ambrosia, which Zopyrus is said to have compounded for the King Ptolemy ; another was the celebrated antidote of King Mithridates.

The Greeks called their embrocations or ointments euchrista. The catapotia was the method used for internal administration in liquid form, for which many recipes are given by Celsus. The following will serve as an example :

ATHENIO'S CATAPOTIA FOR A COUGH.

Myrrh, pepper, each . . . . . p. X i.
Castor, poppy tears, each . . . . p. X i.

which are bruised separately and afterwards mixed.

For venomous bites the treatment of the ancients, if the wound was severe, was first cupping, or if slight, the plaster of Diogenes was applied, or a salt fish bound over the wound. A curious remedy practised by the Greeks for hydrophobia was to throw the patient suddenly into a pond, and "if he could not swim let him sink several times, and thus drink ; if he can swim, keep him down at times until he may be satiated with water, for thus at once," writes Celsus, "is both the thirst and dread of water removed."

Their antidote for nearly all poisons was warm oil, given in order to induce vomiting.

The word collyrium, now applied to a lotion for the eyes, was also used by ancients, but they gave it a greater latitude, and also employed it to describe a composition of powders wrought to a pasty consistence with some liquid, and formed into something like a tent for insertion into cavities.

Of the chemical bodies and drugs known both to Greek and the Romans the number is not a few.

Cinnabar, which seems to have been known from a very remote period, was the name applied to the red sulphide of mercury, and also to dragon's blood. It is doubtless of the latter Pliny says "he believed to be the gore of a dragon crushed by the weight of a dying elephant, with a mixture of the blood of these animals." Copperas, lead, alum, copper and iron were used as styptics.

Myrrh, frankincense, cardamoms, linseed, isinglass and cobwebs as astringents.

Galbanum, storax, bitumen, are recommended for promoting suppuration, while pennyroyal, sulphur, pellitory, stavesacre, ox-gall, scammony, rue and opium were all included in their medical recipes.

Dioscorides was the first to attempt to record in anything like a methodical manner the many drugs and chemical substances used by the early Greeks.

Pedacian Dioscorides, born in Anazarba in Cilicia, was a Greek physician who lived in or about the second century. He gathered a great portion of his information on materia medica during his travels with the Roman army, which he accompanied on several expeditions in his capacity of physician. Afterwards he wrote his great work "Peri Hules Iatrikes" (about materia medica), which for fifteen centuries or more remained one of the chief authorities on that science.

It treats of all the medicines then in use, with their preparation and action as then known. The works of this early physician first appeared in a Latin translation in 1478, the first Greek edition being published in 1499. The work was afterwards translated into Spanish, Italian, French, German and Arabic.

In describing the *Papaver sativum* and its virtues in this work, he says, "It is not improper to subjoin the method in which the opus, or juice, of it is collected. Some then cutting the poppyheads with the leaves, squeeze them through a press, and rubbing them in a mortar, form them into troches. This is called meconium, and is weaker than the opus. But whoever desires to gather the juice must proceed thus: After the heads are moistened with dew let him cut round the asterisk (*) with a knife, but not penetrate through them, and from the sides cut straight lines in the surface, and draw off the tear that flows with his finger into a shell. And come again not long after, for it will be found standing upon it, and the day following it will be found in the same manner." Hence the old name poppy tears. Dioscorides was also learned in the preparation of wool fat, which he calls œsypum, known to modern pharmacists as lanoline. He says, "œsypum was the oily part collected from sordid wool, thus: The wool is washed in warm water and all its sordes expressed; the fat floated with a froth, and upon throwing in some sea water it subsided; and when all the œsypum was obtained from it in this manner it was purified by repeated affusions of water. When pure it had no sharp taste, and was in some degree astringent and appeared white, and was emollient and filled up ulcers."

Recent excavations made at Pompeii and Herculaneum have thrown some further light on various articles in the materia medica as it existed in the days just preceding the destruction of those cities. Aloes seems to have been held in high esteem by the practitioners of the time, and was employed, we learn from the historian, in twenty-nine diseases. It was prescribed in doses from 1 to 111 drachmas (about 68 grains), and mixed with wine was employed to stimulate the growth of the hair. Aconite, we find, was used in four diseases, and was supposed to be an antidote to any poison which might exist in the system. Other remedies mentioned include gum acacia, colocynth, elaterium, gold, silver, copper and elecampane. It is further recorded of the latter drug that Julia Augusta, daughter of Augustus Cæsar, ate the root daily.

Of the vegetable remedies about 150 are enumerated, and of these the cabbage seems to have held a prominent place. Other favorite medicines were rye, garlic, anise, mallow, rose and lily.

In the animal kingdom the remedies contributed were numerous, being mainly the various parts of man and beast. Among some of the least disgusting, hair, blood, saliva may be mentioned.

Scrapings from the bodies of athletes mixed with the oil with which they anointed themselves were used as a tonic. The hair of a man torn from the cross was used as a remedy for quartan fever. The hyena was employed as a medicinal agent in seventy-nine diseases, and the crocodile, chameleon, lion, elephant, camel and the hippopotamus all contributed certain curative agents. Wool fat was held in great esteem.

Of minerals, iron, lead, nitrum, salt, gold, tin, silver, realgar, copper, and misy, a combination of the sulphates of copper and iron, are enumerated. Most of these articles are mentioned by the second Pliny, who was killed during the eruption of Mt. Vesuvius which buried Pompeii.—From *The Spatula*, March, 1900, 281.

* * *

——The annual meeting of the Alumni Association (P.C.P.) will be held at the College on Monday, April 16, 1900, 2 P.M.; the Reception to the Graduating Class, at the College, in the evening, and the Annual Commencement of the College, at the Academy of Music, on Wednesday, April 18, 1900, at 8 P.M.

# HOWARD BARCLAY FRENCH.

On Monday afternoon, March 26, 1900, the Philadelphia College of Pharmacy unanimously elected Howard Barclay French, '71 (P.C.P.), President, to succeed the late Charles Bullock, '47. Mr. French has been for about five years Second Vice-President of the College, and for about ten years Chairman of its Property Committee. In the latter capacity he supervised the erection of the handsome building that has been the home of the institution during the past few years. He has also done much to advance the interests of the College in other directions.

Mr. French, so states the Philadelphia *Ledger*, is the senior member of the house of Samuel H. French & Co., of which his father, Samuel H. French, was the founder. He is sixth in descent from Thomas French, a Friend, who came to this country in 1680, and traces his ancestry back to Gregory Clement, whose name appears on the death warrant of Charles I. The "Barclay" in his name comes from the famous Quaker theologian, whose "Apology" is well known to students in that line. He was born in Salem, O., and his family moved to Philadelphia when he was 4 years old, his father entering business here as the senior member of the old house of French, Richards & Co., wholesale druggists and paint manufacturers. For some years young French attended Friends' schools, but in 1866, after an illness of some weeks, realizing that if he went back to school he would be obliged to go to the foot of his classes, and being anxious to make a start for himself, sought employment. With a leaning toward pharmacy, he applied to William B. Webb to be received into his store as an apprentice. As he was the son of a well-to-do father, Mr. Webb was doubtful as to accepting him, but agreed to take him three months on trial. Apprentice French, however, was as industrious as any poor boy could have been.

He graduated from the Philadelphia College of Pharmacy in 1871.

Being then well grounded in pharmacy, the young graduate was taken into his father's store, at a salary of $300 a year. He served his parent as well as he had his former master, and the following year he was made assistant superintendent of the paint department of the house of French, Richards & Co., at a salary of $1,000 a year. In 1883, largely through the influence of Howard B. French, the old house divided up, the two branches of the business being separated, the new firm of Samuel H. French & Co. taking the paint department. The house of Smith, Kline & French Company is the successor of the old firm in the drug line. Mr. French had prior to this thought seriously of giving up business for the medical profession, and in 1879 he began attending lectures at Jefferson Medical College, keeping up by working long hours his own office duties. The idea of a professional life, however, was later reluctantly abandoned.

Although he has had the direction of large business interests, Mr. French has found time for philanthropy, politics and public movements generally. He has been chairman of important committees in the Trades' League, a director of the Manufacturers' Club, a trustee of the Southern Home for Destitute Children, a manager of the Home Missionary Society, a director of the Equitable Trust Company, President of the National Paint, Oil and Varnish Association, as well as active in the local association of paint manufacturers.

Mr. French has been active in local political reform movements at various times, and in 1895 he was Chairman of the Citizens' Committee. He was Vice-President of the McKinley and Hobart Business Men's Campaign Committee, which was an important factor in the last national campaign, and later he has been President of the Philadelphia Branch of the National Business Men's Republican League, successor of the organization just named.

*HOWARD B. FRENCH.*

# REPORT OF APRIL MEETING OF P. A. R. D.

By Secretary W. A. Rumsey.

The report of the meeting of the Philadelphia Association of Retail Druggists, held April 6, 1900, is as follows:

President McIntyre called the meeting to order at 3.15 P.M., the attendance numbering about 100.

J. C. Perry, Chairman of Executive Committee, reported the names of nine new members, and called attention to the following rule of the Bell Telephone Company, which is not strictly enforced:

"The use of the telephone is limited to the subscriber, his family or employee in his interest. Subscribers have not the right to allow its use by other parties. Instruments may be removed if this condition of the lease is disregarded."

If any member knows of abuse of this rule, by writing to Mr. Garwood, of the Bell Telephone Company, or to the Chairman of the Executive Committee, it will be investigated.

Mercantile Tax.—According to the new ruling druggists do not have to pay a tax on preparations manufactured at their place of business.

Those who have filed their report—giving their gross sales—can appeal after May 1. The date set for each ward is printed on back of appraiser's bill.

Extract from opinion of Hon. John P. Elkin, Attorney-General of Pennsylvania:

"(1) Manufacturers may sell their own products at their factories or send them to commission merchants to sell without being liable to a mercantile license tax . . ."

"(5) All manufacturers who bestow care, skill or labor upon the articles manufactured and sold by them are exempt from the payment of a mercantile tax—if the goods are sold at the manufacturing establishment . . ."

Sunday Selling.—With the able assistance of some of our members the Executive Committee can assure the druggists of Philadelphia that those who choose to sell soda water on Sunday can do so, and that no action will be taken against them without a joint meeting of the associations. The former agreement regarding the sale of cigars and candy remains the same, and druggists are requested to be strict in regard to selling the above. They are also requested to lower curtains and extinguish window lights.

Attention was called to the N. A. R. D. assessment, and it was voted that $50 be sent on account of our dues.

During the past month the Association has lost two members by death, and the Executive Committee desires the appointment of a Memorial Committee. The following was then appointed: W. W. Chalfant, Chairman, J. W. Pechin, Dr. F. A. Conertin, Russell Blackwood, Chas. G. Neely.

The following members volunteered to go to Washington to attend the hearing of the Ways and Means Committee in reference to the repeal of the stamp tax on April 17:

Messrs. McIntyre, Cliffe, Poley, Hoch and Gatchell.

Bills amounting to $14.15 were presented and ordered paid.

The following notice of changes in Constitution was made:

Article IV. Change to read as follows:

"The officers of the Association shall be a President and three Vice-Presidents, Recording Secretary, Financial Secretary, Treasurer and an Executive Committee of seven members."

Article V. Cross out "a member off."

The following Committee was appointed to go over Constitution and By-Laws and have the same printed: W. A. Rumsey, Chairman, S. C. Henry, H. H. Ross, Chas. F. Farrow, Jacob M. Baer.

Chas. Leedom moved and it was adopted that a Committee be appointed to consult

proprietary manufacturers and formulate a plan whereby a limited retail selling price can be placed on proprietary remedies.

The following Committee was appointed: Chas. Leedom, Chairman, L. C. Funk, W. H. Poley, E. M. Boring, W. F. Steinmetz.

On motion of J. G. Howard, the meeting adjourned, to meet May 4, at 2 P.M., instead of 3 P.M., the usual hour.

P. S.—A book will be provided for registering attendance at regular meetings. All members hereafter will kindly register on entering the room.

# Examination Questions of the P.C.P.

1899-1900.

The examinations of the first and second year classes of the P.C.P. were recently held. Those in operative pharmacy, analytical chemistry, botany and pharmacognosy were made in the laboratories; those in the other branches were written.

## FIRST YEAR EXAMINATION.

### THEORY AND PRACTICE OF PHARMACY.

*A*—(1) What is a fluid extract? (2) Give the typical formula for an official fluid extract. (3) What is meant by a fluid extract made by percolation with incomplete exhaustion? (4) Describe continuous percolation and illustrate Beck's process by a sketch or detailed description.

*B*—(1) What is meant by vacuum percolation? (2) What are the uses of vacuum evaporation? (3) What mechanical methods are employed in applying a vacuum to evaporation? (4) Name three examples of products used in pharmacy, or the arts, in the manufacture of which a vacuum pan is employed, and give reasons for using it in each case.

### CHEMISTRY.

*C*—(1) Describe the element Chlorine, and write a reaction for its production. (2) What are the chief uses of Chlorine in the arts, and in what forms or preparations is it mainly taken for such utilization? (3) Give the formula for its Hydrogen Compound, and write a reaction for its production. (4) What are the compounds of Chlorine and the metals called? Give examples, naming official compounds. (5) Give the list of compounds of Chlorine and Oxygen, with names and formulas.

*D*—(1) Describe the occurrence of the element Carbon in nature. (2) Name the official forms of Carbon, and state the uses of each. (3) Mention the several Oxides of Carbon, and describe each. (4) What is the formula of Carbonic Acid, and how is it made? (5) Give the formula of a neutral carbonate, an acid carbonate and a basic carbonate.

### PHYSIOLOGY.

*E—Digestion.*—(1) Name the digestive ferments which act upon the following, viz., bread, butter and meat. (2) State where these ferments are secreted, and the changes which take place in these foods to render them fit for absorption. *The Blood.*—(3) State briefly the route of the circulation of the blood. (4) What ratio do the beats of the heart bear to each respiration? *The Urine.*—(5) What is its normal specific gravity, reaction, quantity, color and odor? (6) Name briefly its route from the blood to the bladder. *The Nervous System.*—(7) Of what two kinds of matter is nerve tissue composed? (8) In case of contact of a finger with a hot iron, what action will take place, and why? State briefly the functions of the cerebellum and cerebrum.

### BOTANY.

*F*—(1) What is the proper time, generally speaking, for the collection of each of the following for medicinal purposes: roots, rhizomes, leaves, flowers, fruits and seeds?

State your reasons. (2) By what means may vegetable drugs be preserved from the attacks of insects? (3) What is an albumenous seed, and explain what is meant by albumen. (4) What is a composite flower? Give a drug example and indicate by means of a diagram the different parts of such a flower. (5) Explain all the steps you would take in making an examination of a powdered drug, first for identification and then for purity.

COMMITTEE.

*G*—(1) Describe Oxygen. (2) Give its symbol, atomic weight and valence. (3) In what form does it chiefly occur in nature? In commerce? (4) How may Oxygen be prepared? (5) What is Hydrogen Peroxide? (6) Give the percentage of Oxygen required by the U.S.P. for this compound. (7) For what purpose is it used in the arts? In medicine?

*H*—(1) Express in figures the following metric weights, and take their sum: Three and one-half kilogrammes, fifty-four grammes, ninety-five centigrammes, eight hundred and five milligrammes. (2) How many grammes of diluted Acetic Acid (6 per cent.) may be made from 3 kilogrammes of 80 per cent. Acetic Acid? (3) If a proprietary article selling at $1 yields a profit of 33⅓ per cent., what would it cost and what percentage of profit would be secured if it were sold at a "cut rate" of 80 cents?

*I*—(1) What are medicated waters? (2) How are they usually prepared? (3) What is the advantage of using steam in preparing some of them? (4) For what purpose are they usually employed in preparations? (5) Name five official waters, giving official and English names.

*K*—(1) Write a brief account (ten or twenty lines) of the uses of Acetic Acid as a menstruum, describing its advantages and its limitations. (2) For what classes of galenical preparations is it best fitted?

OPERATIVE PHARMACY.

(1) *Specific Gravity.*

Determine the specific gravity of the liquid in the bottle labelled "specific gravity liquid;" put all calculations on the sheet of paper, with your name and examination number.

(2) *Granulated Salt.*

Ammonium Chloride . . 20 gm.

Purify, granulate, and put in a wide-mouth bottle.

(3) *Mass of Mercury.*

| | | |
|---|---|---|
| Mercury . . . . . | 6·6 | gm. |
| Powd. Glycyrrhiza . . . | 1· | gm. |
| Powd. Althæa . . . . . | 5· | gm. |
| Honey of Rose . . . . . | 5· | c.c. |
| Glycerin . . . . . | 10 | drops |

Put in a walnut box.

PRACTICAL BOTANY.

(1) Identify the specimens in the mixture of drugs, giving their pharmacopœial names.

(2) Identify three powders and give your opinion as to their purity.

(3) Make sections of the drug and state whether it is a root or rhizome, monocotyledon or dicotyledon, and make a diagram indicating the kinds of tissues and their cell contents.

## SECOND YEAR EXAMINATION.

THEORY AND PRACTICE OF PHARMACY.

*A—Mercury.*—(1) Give the unabbreviated official names of five preparations of the U. S. Pharmacopœia, each containing Mercury in the metallic state. (2) Why are the words "Corrosivum," "Mite," "Flavum," "Rubrum" used in the official titles of Mercurial Salts instead of the chemical names? (3) How is Red Mercuric Iodide made? (4) Why is it necessary to use the exact quantities prescribed by the formula? (5) How is Yellow Mercurous Iodide made? (6) What was the official name of this salt in the U.S.P., 1880? (7) To what is the variation in color of this compound due?

*B—Cotton.*—(1) Under what title is cotton wool official? (2) How is absorbent cotton made? (3) In what respect does raw cotton differ from absorbent cotton? (4) Describe a good test for absorbent cotton. (5) What

action has Sulphuric Acid mixed with water (2 to 1) upon Cellulose? (6) How is Pyroxylin made? (7) What are the uses of Pyroxylin?

*C—Acacia.*—(1) What is the chemical composition of Acacia? (2) What is its solubility in water? (3) In alcohol? (4) Describe the best process for making official mucilage of Acacia. (5) In dispensing, why is granulated Acacia often to be preferred to finely powdered Acacia? (6) What action have the following upon a solution of Acacia: Neutral Lead Acetate, Basic Lead Acetate, Sodium Silicate, Sodium Borate, Ferric Chloride?

*D—Acid Saccharine Fruits.*—(1) What acids are usually found in these fruits? (2) Describe the action of the natural ferment found in fruits upon the pulpy constituents. (3) What is pectose, and pectin? (4) Why does the rapid application of strong heat prevent the gelatinization of fruit juices? (5) Describe an effective process of preserving fruit juices without the use of chemicals.

*E—Sinapisms.*—(1) What two kinds of mustard seed are official? (2) Name the constituents of each. (3) Describe the action of the constituents in producing pungency in the mustard used in making "Charta Sinapis, U.S.P." (4) Give the official process for making "mustard paper." (5) Why is it necessary to protect the finished preparation from the action of moisture in the air? (6) Why is tepid water preferred to hot water in mixing a mustard plaster?

CHEMISTRY.

*F*—(1) Describe the occurrence of salt, and state how it is extracted from the crude native material. (2) For what important industries does salt serve as the starting point? Mention some of the products of these industries. (3) Write the formulas of Sodii Chloridum, Sodii Chloras, Sodii Bisulphis, Sodii Hyposulphis, Sodii Phosphas, Sodii Hypophosphis, Sodii Boras, and Sodii Carbonas.

*G*—(1) To what group of metals does Calcium belong? (2) Describe Calx Chlorata; give an account of its preparation, and state its pharmaceutical and technical uses. (3) What is the formula of Calcium Carbide? How is it formed and what is it used for? Write the reaction for its decomposition by water.

*H*—(1) Describe the appearance of the metal Copper, and give its physical properties. Mention its most important ores, stating their composition. (2) Mention the important alloys of Copper. (3) Enumerate the analytical tests by which Copper salts or solutions can be identified.

*I*—(1) Mention the most important forms of Carbon, both natural and artificial. State how the latter are produced. (2) Describe the official varieties of Carbon, and state their uses in the arts. (3) What are the chemical differences between "coal gas" and "water gas?" How is the latter made?

*K*—(1) Describe the metal Lead and state how it is obtained. (2) Give the formulas for the most important official salts of this metal. (3) What is "white lead," "red lead," litharge, "sugar of lead?" (4) In what other pigments, if any, is lead contained?

MATERIA MEDICA.

*L—Solanaceæ.*—(1) Give the official name, botanical origins, habitats and constituents of three mydriatic leaf drugs obtained from this order. (2) Define the term mydriatic, and state the action of such a drug. (3) Give official names and doses of the salts of three mydriatic alkaloids.

*M—Strychnine.*—(1) Give the botanical origins and habitats of the seeds yielding this alkaloid. (2) From what source is it obtained commercially? (3) Give the maximum dose. (4) State briefly its action upon the gastro-intestinal tract, the spinal cord, the circulation and the respiration.

*N—Rubiaceæ.*—(1) Name an emetic root derived from this order and the alkaloid which it contains. (2) Name a febrifuge bark yielded by this order. (3) Under what names is it official and what are the pharmacopœial requirements regarding its constituents? (4) State its habitat, the countries where it is

now cultivated and the manner of collection of the cultivated barks. (5) Name the four principal alkaloids yielded by it and state the ratio of their efficiency as antiperiodics.

*O—Coca.*—(1) State the botanical origin, habitat and natural order. (2) Name the two varieties and state which is preferred. (3) What is the action of this drug and how is it used by the South American Indians? (4) Name its principal alkaloid and the amount present in the dried leaves and in the fresh leaves. (5) What action has this alkaloid upon the pupil of the eye and upon the sensory nerves? (6) What quantity is a safe dose? (7) Name the similar synthetic alkaloids that are in use.

*P—Botanical Names.*—Give the botanical names of the plants yielding the following, viz.: (1) Nicotine. (2) Quebrachamine. (3) Narcotine. (4) Eserine. (5) Veratrine. (6) Sparteine. (7) Salicin. (8) Lupulin. (9) Digitoxin. (10) Methyl Salicylate.

PHARMACOGNOSY.

(1) Identify fifty of the specimens in the mixture of drugs, giving their pharmacopœial names.

(2) Identify five of the powders; give your opinion as to their purity and state all your reasons.

(3) Give the names of the sediments in the specimen of urine and draw the characteristics.

ANALYTICAL CHEMISTRY.

This included the qualitative analysis of urine for abnormal constituents and the examination, for basic and acid constituents, of pure and adulterated pharmacopœial powders.

SPECIMENS FOR RECOGNITION.

(1) Aqua Fœniculi. (2) Linimentum Chloroformi. (3) Extractum Senna Fluidum. (4) Syrupus Ferri Iodidi. (5) Tinctura Gentiana Composita. (6) Ammonii Carbonas. (7) Alumen. (8) Magnesii Carbonas. (9) Ferri Sulphas. (10) Aqua Chlori. (11) Aconitum. (12) Rhamnus Purshiana. (13) Belladonna Folia. (14) Marrubium. (15) Santonica.

# Our Graduates.

**(In order to make this department of the REPORT as generally interesting as possible, the graduates of the Philadelphia College of Pharmacy are requested to send items of information concerning graduates to the editor of the REPORT. By so doing, they can keep in social touch with fellow-graduates and renew the friendships of college days.)**

## MEMORIAL ROSTER.

Sombart.—On Friday, March 2, 1900, at Hot Springs, Ark., Joseph Louis Sombart, '90, aged 35 years, from an overdose morphine and heart failure, accidentally taken to relieve insomnia, of Bornville, Mo.

Van Scoter.—On Monday, March 5, 1900, at Dunkirk, New York, Jay Chester Van Scoter, '87, of bronchitis, aged 37 years. Interred at Dunkirk, N. Y.

Wingert.—On Tuesday morning, March 6, 1900, at 821 Fourth Avenue, Knoxville, Tenn., Dr. Harry K. Wingert, '92, aged 39 years, of nervous prostration.

Maris.—Suddenly on Saturday, March 17, 1900, at 3859 Cambridge Street, Philadelphia, Robert W. Maris, '88, aged 34 years.

Bullock.—On Wednesday evening, March 21, 1900, at his late residence, 1017 Clinton Street, Charles Bullock, '47, aged 74 years, of pneumonia. Interment was had at Wilmington, Del.

Weaver.—On Thursday, March 22, 1900, at Eleventh and Northampton Streets, Easton, Pa., John A. Weaver, '71, aged 51 years.

Carpenter.—On Thursday, March 22, 1900, at 1300 Washington Street, Wilming-

ton, Del., Howard P. Carpenter, of a pistol-shot wound self-inflicted, aged 28 years.

Pinchback.—On Saturday, March 24, 1900, at Phœnix, Ariz., Pinckney N. Pinchback, '87, aged 37 years, of Thirty-fourth Street and Woodland Avenue, Philadelphia.

Paxson.—On Monday, March 26, 1900, at 2519 Douglass Street, Philadelphia, Elmer M. Paxson, '93, aged 28 years.

## PERSONALS.

——Edward S. Power, '82, who has taken a position in one of George B. Evans' big drug stores in Philadelphia, was formerly proprietor of the store at Fifteenth Street and Montgomery Avenue, in this city.

——D. G. E. Musselmann, who was formerly proprietor of a store at Twentieth and Parrish Streets, Philadelphia, has taken a position with H. K. Mulford & Co., of that city, to do detail work among physicians.

——Licenses were recently issued in Philadelphia for the marriage of Thomas H. Potts, '71, of Seventeenth and Montgomery Avenue, to Miss Helen M. Reckless, and to William H. Booth, '95, of North Avenue, Baltimore, to marry Miss Florence D. Haines, of Philadelphia.

——Dr. William H. Crane, '90, who has a store at Thirteenth Street and Snyder Avenue, Philadelphia, and is a member of the Common Council from the Thirty-ninth Ward, is trying to secure the enactment of legislation to stop promiscuous spitting, with a view to lessening the ravages of consumption. He has issued a circular letter in support of his proposed ordinance.

## NOTES.

——Joseph W. England, '83, has resigned his position as Chief Druggist of the Department of Charities and Corrections, of Philadelphia, states the *American Druggist*, to take charge of the pharmaceutical laboratory of H. K. Mulford Company. Mr. England became assistant druggist at the Philadelphia Hospital in November, 1884, and Chief Druggist in 1886. Under his direction 1,583,000 prescriptions have been compounded without a single untoward result due to any mistake in compounding. He has been the pharmaceutical editor of the Philadelphia Hospital Formulary, is editor of the ALUMNI REPORT and is widely known as a writer on pharmaceutical subjects. He is a trustee of the Philadelphia College of Pharmacy and Curator of its museum, and takes a very active part in the State and National Pharmaceutical Association. Mr. England will be a distinct acquisition to the staff of H. K. Mulford & Co., who are to be congratulated on securing his services.

——Sunday evening, February 11, 1900, was the eve of the fiftieth anniversary of the first election of Jacob L. Smith to the vestry of St. Jude's Church, Philadelphia. During these fifty years he has rendered faithful service as a vestryman and during a large part of the time as accounting warden. At the evening service, on Sunday, February 11, this interesting and unusual fact was marked by placing in the church a beautiful eagle lectern in black walnut which bears the following inscription: "February 12, 1850. To the glory of God, and in grateful recognition of fifty years of devoted and continuous service by Jacob L. Smith as a vestryman of St. Jude's Church. February 12, 1900." A new lectern Bible (folio) from the Oxford University Press was placed on the lectern also, and fifty fine "American Beauties" were presented to Mr. Smith at the close of the service. The church was filled as it has seldom been in its whole history with members of the congregation, personal friends of Mr. Smith from other churches, and a goodly number of friends from the laboratory with which he has been connected for more than fifty years. The services were held and addresses were made. It is worthy of mention that the object of the special service and his connection with the testimonial presented did not become known to Mr. Smith until the fact was actually stated by the rector in the course of his

address. And no doubt he was quite as much surprised when, after the service, he retired to the vestry-room according to usual custom, and found the hundreds of people that composed the congregation filing in through the Sunday-school room in orderly manner that they might grasp his hand and offer him their personal congratulations.

# Class News.

——The Class Annual of the Graduating Class of the Philadelphia College of Pharmacy, entitled "The Graduate of 1900," which is being edited and published by class '00, has now gone to press and the class of naughty-naught are anxiously waiting for the book to make its appearance. This volume, being the second one of its kind ever edited and published by any class of this College, contains a full history of the class, which is one that the Class of '00 may be well proud of. Chief Editor Franke expects the book to be ready for distribution about middle of May.

——Mainard Lester Baker, who died of typhoid fever in Philadelphia, on Monday, March 19, 1900, was born in Union Co., Pa., near a little town called Cowan, on November 26, 1877. He was for several years a student at Bucknell University, at Lewisburg, then for three years at the School of Pharmacy he had shown marked progress for his chosen profession, and he had been in Stein's drug store at Mifflinburg; with Mr. Warrington, Seventeenth and Mt. Vernon Streets; at Wilson's Pharmacy, at Ninth and Filbert Streets, and Mr. Siegler, Twenty-third and Parrish, all of this city, and in all of which he was held in high estimation for his ability and gentlemanly manner. The funeral services were held from his parents' residence, a long concourse of friends being present. The services were conducted by Rev. A. B. Collins, Pastor of the Presbyterian Church, Dr. Harris, Professors Martin and Edwards, of the University. The pall-bearers were Messrs. J. W. Bucher, W. C. Ginter, John M. and B. F. Gundy, Donald Brook and Robert M. Darlington.

## SECOND YEAR CLASS NOTES.

——One hundred and ten men took the second year examinations.

——A balance of 18 cents in the treasury. This was given to the Athletic Committee.

——Shakespeare has had his share of glory, but takes his fate philosophically.

——Many are taking the spring course in chemistry, and enjoying its advantages.

——Every one agrees the examinations were not easy, but all admit that they were fair.

——Harris is the popular yell captain with a good strong pair of lungs to lead the shouts.

——Highfield has concluded to exchange his small flags for doll caps. All an accident, but a fact nevertheless.

——The quartette, composed of Messrs. Garber, Boesch, Steever and Garber, were unable to take part in the programme, owing to the illness of Mr. Mickels.

——The acute attacks of "dyspepsia" which Picking, Ziegler and Garber have suffered at some of the clinics at the hospitals have been amusing as well as exciting.

—— So Murphy is the prize-winner for the second year. A dark horse, but from all reports he was a hard student, and deserves the honors. His grades were V. S. in everything except pharmacognosy, and satisfactory in that branch.

——The last Beta Phi meeting was held March 12, 1900. After a short business session the remainder of the time was taken up with music. Banjo solo by Byron G. Shannon, piano solo by Victor C. Michels and Otto L. Kraus. Selection by quartette.

——Sad news first examination day. A window in the pharmacy lecture-room door, which was accidentally broken some days before, was charged to the class and the bill presented. The class met and appointed a committee to raise the wherewithal by subscription.

——The reporters request that all second year students who are in the city will send them, at the College, their addresses. They would like also that of those who are out of the city ; the purpose being to keep in touch in some way with the class during the summer season.

——On March 17, 1900, the Century Club visited John Wyeth & Co.'s manufacturing laboratory. Wm. B. Thompson had charge of the party, and explained why and how they make their products as they do. Wm. Jenks, of the fluid extract department, explained the workings of his department in a very lucid manner, leaving a firm impression of the large scale on which their tinctures, solid and fluid extracts are made.

EARL H. CONE,
E. F. W. GARBER,
*Beta Phi Reporters.*

THIRD YEAR CLASS NOTES.

——Hauber is not generally recognized now-a-days. He has removed the eider-down from his upper lip.

——Ask Edwards how he assays Cinchona Bark. He has discovered a new alkaloid, and has named it *barkine.* How suggestive the name is to frankfurters !

——Garritt received a valentine in the shape of a necktie and it is truly a thing of art. It has the appearance of being blue-washed and whitewashed simultaneously.

——"Bruno," Stinson's protege, may in the near future develop into a champion lightweight. In deportment, etc., he is very similar to ex-champion George Dixon. At the recent meeting of the Zeta Phi, the bout in which "Bruno" participated as one of the principals was heartily applauded.

——As collaborators, Stinson and Lehman "take the cake." Their latest venture is rather unique. They have agreed to go into raising the breed of pigs known as Chesterwhites, and to share equally the gains and losses.

ROBERT C. PURSEL,
WALTER BROOKS,
*Zeta Phi Reporters.*

# Items.

——Dr. Samuel Martin Strohecker, '90, has graduated from the College of Physicians and Surgeons, University of Illinois, and is now in the practice of medicine at 10192 Winston Avenue, Chicago, Ill.

——Mainard Lester Baker, a third year student of P.C.P., died of typhoid fever on Monday, March 19, 1900, at his late residence in this city. His funeral was held on Thursday, March 22, 1900. His remains were transported to his former home at Cowan, Union County, Pa.

——Philadelphians are raised among medicines, states *Meyer Bros. Druggist.* According to a paper recently read before the Philadelphia College of Pharmacy, by Chas. H. La Wall, 75 per cent. of the official drugs (no doubt vegetable drugs are meant) are growing within a radius of a few miles of Philadelphia. The author further states that more than 50 per cent. of the United States Pharmacopœial drugs are sold on the streets of Philadelphia by persons who earn their living collecting and preparing them for sale. Under such conditions, is it a wonder that Philadelphia should be such a great pharmaceutical centre ?

*Field Work in Botany for Spring of 1900.* —On Wednesday afternoons during April

and May the following excursions will be made and are open to all matriculates of the Philadelphia College of Pharmacy as well as others who may desire to go :

April 25. CRESCENTVILLE, Pa.—Meet in front of Bourse Building, on Fifth Street, at 1.30 P.M., and take Fifth Street trolley to Crescentville. Fare, 10 cents.

May 2. CEDAR GROVE, Pa.—Leave Reading Terminal at 2.13 P.M., returning 4.17 P.M. Fare, 15 cents.

May 9. SWARTHMORE, Pa.—Take Angora car on Walnut Street and meet at Angora Junction at 2 P.M., thence trolley to Swarthmore. Fare, 20 cents.

May 16. UPPER WISSAHICKON. — Take Chestnut Hill car on Eighth Street and meet at junction of Chestnut Hill and Norristown trolley at 2.30 P.M. Fare, 10 cents.

May 23. HADDONFIELD, N. J.—Leave Market Street Ferry about 2 P.M. Those going by trolley will meet the party on arrival of train at Haddonfield Station. Fare, 25 cents.

May 30. UNIVERSITY BOTANICAL GARDENS. —Meet at Biological Hall of the University of Pennsylvania (opposite dormitories, about Thirty-eighth and Spruce Streets), at 2 P.M.

——Under the title of "The Origin of Fluid Extracts," C. V. Emich has an interesting note in a recent issue of the *Spatula*, as follows :

The impressions seem to be very general that this very excellent class of medicines is particularly an American institution, starting with the peculiar compounds introduced by Mr. Carpenter, of Philadelphia. These preparations of Mr. Carpenter were in demand for many years, and only disappeared when replaced by the superior products introduced by William Procter, Jr., and his compeers. Having occasion to look into this matter of the origin of fluid extracts, the writer was surprised to find, on an examination of the *Journal of Philadelphia College of Pharmacy* (and the *American Journal of Pharmacy* since 1835, *J. W. E.*), that the credit for their manufacture is given to England, by Charles Ellis, of Philadelphia, in an article giving a formula for fluid extract of senna, read before the Philadelphia College of Pharmacy, November 25, 1834. The language is :

"A class of pharmaceutical preparations has, within a few years past, been extensively introduced into use in England, and to a limited extent in this country, under the name of Concentrated Essences or Fluid Extracts." Then with the fine instincts of the business seer, he goes on to say : "Reasoning from analogy, there are yet very many medicinal plants in the vegetable kingdom which may, with great advantage, be subjected to the same ordeal." Mr. Ellis lived to see his anticipations realized. In the face of this favorable beginning, there is no further mention of fluid extracts in the journal until the volume for 1842, in which Aug. Duhamel furnishes a formula for fluid extract of senna, using Hoffman's anodyne for the correction of the griping so peculiar to senna and its preparations. Two years later Mr. Ellis (Dec. 2, 1844), at a meeting of the Philadelphia College, called attention to this fluid extract again, and quite a discussion took place, resulting in a promise on the part of William Procter, to prepare fluid extract of senna, both from the India senna and the Alexandria senna. There is no record of the fulfilment of this promise, and the question lay in abeyance until, in 1847, Mr. Ellis published a formula for fluid extract of valerian, and in the same volume Mr. Procter published a formula for fluid extract of rhubarb. Since then the production of fluid extracts has been rapid and continuous, and if, as Mr. Ellis states, they are of English origin, the claim can be made that their development and value are due to our own land and countrymen. The difficulty of getting a start in development, so often witnessed in other matters, is well illustrated by the fact of the lapse of thirteen years from the introduction of the first formula before a second formula followed.

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## PHILADELPHIA COLLEGE OF PHARMACY

145 NORTH TENTH STREET

The regular Pharmaceutical Meeting will be held Tuesday, April 17th, at 3 P.M. The following is the program:

1. The Cultivation and Economics of Agave. Illustrated with Lantern Slides and Specimens. By FREDERICK L. LEWTON.
2. Formulas for the Official Preparations of Soap. By M. I. WILBERT.
3. An Examination of Acacia. By ROBERT G. SHOULTS.
4. Suggestions for Revising the Seventh Decennial United States Pharmacopœia. By LYMAN F. KEBLER.

The druggists of the city are cordially invited to attend

# Drug Stores for Sale

Druggists' stocks and fixtures appraised. Call, see and examine a large list of desirable stores—some suitable for physicians. Information free to callers. Send stamped envelope with inquiries by mail.

***Long-Established Transfer Agency. References: Many of the Wholesale and Retail Druggists of Philadelphia and elsewhere.***

OFFICE DAYS

MONDAY, WEDNESDAY and FRIDAY

9 A.M. to 3 P.M.

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**147 N. Twelfth Street**

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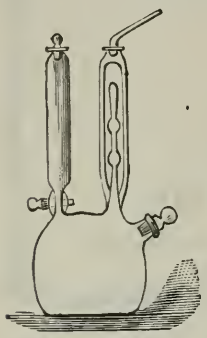

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528 Arch St., Philadelphia

**CHEMICALS AND CHEMICAL APPARATUS**

FULL LABORATORY OUTFITS

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AGENTS FOR MARQUART'S CHEMICALS

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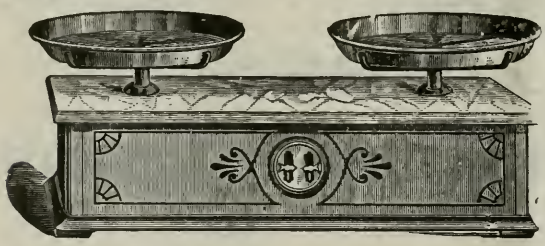
ESTABLISHED 1840.



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MAKER OF

**Fine Scales and Weights**

PRICE-LIST ON APPLICATION.

Troemner's Scales are used exclusively by all the U. S. Mints, Treasury Departments and in the Army and Naval Hospitals.

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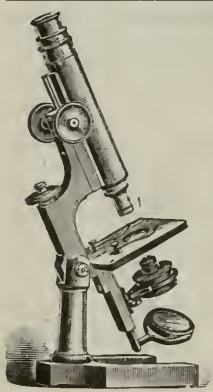
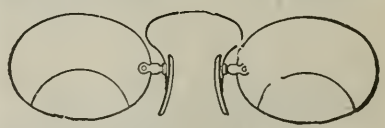


JOSEPH ZENTMAYER

Established 1853

**Optician**



Manufacturer of

Microscopes, Slides, Covers, Glass and Mounting Material, Spectacles and Eye-Glasses

**Developing and Printing for Amateur Photographers**

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We Repair all Instruments of Precision. Special Attention Given to Oculists' Prescriptions. Catalogues on application.

WYETH'S

# PREPARED FOOD

FOR

## Infants and Invalids

PREPARED FROM

## MALT, MILK AND CEREALS

NEW SCIENTIFIC RELIABLE

**A food formed to meet the conditions which these two phases of life present, must be chemically and physiologically adapted; the nutritive elements must be fixed and concentrated; the assimilable properties must be so adjusted that there must be a quick absorption and appropriation, and there must be no excess of substance to tax the power of digestion.**

The superior of mother's milk; a combination affording the physician every advantage and embodying the established principles of infant feeding and hygiene.

Its diastasic properties prevent curdling, correct the ills of malnutrition and tone the weak and wasted organs of digestion.

Wyeth's Prepared Food is not a predigested Food, but one that will digest itself under all conditions—the Malt, rich in diastase, acting in conjunction with the pancreatic secretions, digests the fats and albumenoids of the milk, converting the starch of the cereals into sugar (Maltose) and neutralizing the tendency of the acids of the stomach to form curds—thus rendering the Food of infinite value to the infant and invalid alike, supplying the necessary nutrition and material to strengthen and build up the human economy.

Its digestive properties may be shown by simple test, the progress of conversion being readily noticeable.

PUT UP IN GLASS CONTAINERS AS FOLLOWS:

**In 8-oz. bottles, 35c. size, $2.80 per doz. In 16-oz. bottles, 65c. size, $5.20 per doz.**

**Hospital size, 6 lbs., $2.00 per bottle**

## JOHN WYETH & BROTHER

INCORPORATED

PHILADELPHIA, PENNA., U. S. A.

WRITE FOR COPY OF "PRICES CURRENT" FOR 1900

# WM. H. BROWN & BRO.'S PERFUMES

QUADRUPLE EXTRACTS

## SNOW VIOLET, PEARLS-OF-VIOLETS

PEARLS-OF-ROSES, PEARLS-OF-LILIES
CARNATION PINK, ORCHARD BLOSSOMS
HELIOTROPE BLOSSOMS, WHITE ROSE BUDS
MARGUERITE

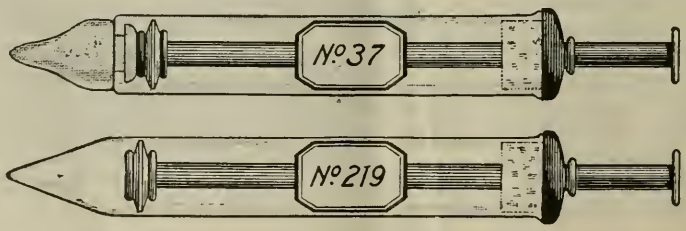
OUR GENUINE VIOLET WATER
AND
EAU DE TOILETTE PEARLS-OF-VIOLETS
PRE-EMINENTLY THE TOILET REQUISITES OF AMERICA

PEARLS-OF-VIOLETS
PEARLS-OF-ROSES } Toilet Powder
SACHET POWDER, ETC.

YOUR CORRESPONDENCE IS SOLICITED
PRICE LIST AND SAMPLE VIALS OF QUADRUPLE EXTRACTS MAILED UPON APPLICATION

WM. H. BROWN & BRO.'S Perfumes, Baltimore, Md.

# Two Desirable Glass Syringes




½-OUNCE CAPACITY

**Made with Rubber Washers or Packing**

These Syringes will not leak, are much cheaper than Hard Rubber, and can be kept cleaner.

No. 37, with Soft Rubber Tip, dozen in a box . . . . . dozen, $0.75
" " " " " each in wood case . . . . . " .85
No. 219, Glass Conical Point, dozen in a box . . . . . " .50
" " " " each in wood case . . . . . " .60

## JOHN M. MARIS & CO.

**Philadelphia** **New York**

# SIGNS OF SPRING.

Robins, crocuses, snowdrops, new hats and other signs of Spring are now with us; so, too, are the various ailments peculiar to the season, including that of Soda-water thirst which will soon become acute as the weather gets warmer.

Let us refresh your memory about the "H. B. & W." pure fruit flavors by means of which you can rescue the people of your neighborhood from this thirst, and with much satisfaction to your bank account.

These four flavors you especially require:

"L. A. W." appeals strongly to wheelmen.

"Cherry Ripe." The juice of luscious, ripe, meaty cherries, put up as we alone know how; a cherry that makes every other kind of cherry seem ordinary.

"Red Messina Orange." Another drink of drinks; an orange that cannot be improved upon.

"Koko." The best chocolate on the market; the only one made expressly for the fountain. "It Beats the Dutch."

Here is our full list:

| | | | |
|---|---|---|---|
| Apricot | Cranberry | Morella Cherry Phosphate | Raspberry |
| Banana | Fruit Phosphate | Orange | Raspberry Phosphate |
| Blackberry | Grape (Catawba) | Orangeade | Raspberry Vinegar |
| Black Raspberry | Grape (Concord) | Orange Phosphate | Red Currant |
| Blood Orange | Grape (Delaware) | Peach | RED MESSINA ORANGE |
| Calisaya Phosphate | Grape (Wild) | Pear (Bartlett) | *Sherbet |
| Celery and Orange Phosphate | Grape (Unfermented) | Pear (Jargonelle) | Sicily Lemon Phosphate |
| CHERRY RIPE | Huckleberry | Pear (Seckel) | Strawberry |
| Cherry (Morella) | Imperial Sicily Lemon | Pineapple | *Vanilla |
| *Claret Phosphate | Lemon | Plum | Wild Cherry Phosphate |
| *Coffee | Lime | Quince | "L. A. W."—the latest |

Flavors marked * put up as Syrups only.

FRUIT JUICES (in quart champagne bottles)
1 dozen, $5.00; 3 dozen lots, $5.75 per dozen; 6 dozen lots, $5.50 per dozen.

CONCENTRATED SYRUPS (in gallon jugs)
1 gallon, $1.75; 12 gallon lots, $1.65 per gallon; 25 gallon lots, $1.60 per gallon.

KOKO (Chocolate)
1 lb. screw-cap can, $0.50. 5 lb. screw-cap can, $2.25. 10 lb. screw-cap can, $4.25. 25 lb. can, $10.

## *HANCE BROTHERS & WHITE*

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*Pharmaceutical Chemists*

# *IT PAYS*

## *To Dispense Fairchild's*

*When* **Essence of Pepsine** *is prescribed.*

***Fairchild's Essence*** *gives the results the prescriber anticipates, and keeps your customers' trade.*

*Fairchild Bros. & Foster.*

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**TO THE RETAIL DRUGGISTS OF THE UNITED STATES:**

Your attention will shortly be called to a change in the sizes of the packages of

# ESKAY'S Albumenized FOOD

To enable you to intelligently meet the inquiries which your customers may make concerning this, we beg to explain that we have found it impossible to continue giving the large quantity of Food we have hitherto put in the various sized cans, owing to the increase in cost, not only of the ingredients used in its manufacture, but also of the tins and boxes in which it is packed.

**It will be found, however, by careful comparison, that the cost to consumers in new sizes is still far below that of other Foods. Note comparative table:**

| | CONTENTS | COST | |
|---|---|---|---|
| ESKAY'S FOOD, small | (4 ounces) | 6¼c. per ounce. | No other Food on market retailing at 25c. |
| " " medium | (10 ounces) | 5c. " | OTHER FOODS, *6¼c. to 10c. per ounce. |
| " " large | (18 ounces) | 4⅙c. " | " " 7½c. " |
| " " family | (72 ounces) | 3½c. " | " " *4¾c. " |

(*The lower figures apply to Dried Milk Foods requiring about twice the quantity, making comparative cost 12½c. and 9½c. respectively.)

It will therefore be noted that when you sell the new sizes of Eskay's Food, you are still serving your customers with both

**The {BEST / Least Expensive} Food for INFANTS and INVALIDS**

Free samples and handsome advertising matter upon application.

SMITH, KLINE & FRENCH CO., PHILADELPHIA, PA.